

NPIC/R-157/64

## KURUMOCH ROCKET ENGINE TEST FACILITY, USSR



### SUMMARY

[REDACTED] photography of [REDACTED] reveals changes that have taken place in the Kurumoch Rocket Engine Test Facility since [REDACTED] and permits identification of significant details of the facility about which there has been some doubt. It can now be stated that the installation contains five test stands, including two large vertical test stands and three smaller test stands. The large vertical test stand first seen in [REDACTED] is currently operational and contains a single test position. The other large test stand is in the final stage of construction and probably contains a single test

position. One of the three smaller test stands is currently operational and probably contains multiple test positions. The other two test stands are probably operational, and each probably contains a single test position.

The two operational support facilities adjoining the two large test stands appear to be duplicates of each other except for minor differences. The apparent duplication may indicate either that the support facilities do not contain industrial processes which serve the entire test facility or that the items to be tested at the two large test stands are different.

### INTRODUCTION

The purpose of this report is to update a previous NPIC report 1/ published in [REDACTED] on the Kurumoch Rocket Engine Test Facility (BE No [REDACTED], located at 53-31N 49-49E near Kuybyshev, USSR (Figure 1).

The previous report on this installation was compiled from [REDACTED] and [REDACTED] photography, the latest of which was obtained on [REDACTED]. In this report revisions and additions to information previously released are based on photography from [REDACTED] Mission [REDACTED] (Figure 2).

Included in this report are revisions of a number of rather significant items which have permitted the formulation of certain conclusions. To support these conclusions, which are presented in the final section of this study, certain previously reported information is repeated in the body of this report, which consists of four tables included in Figures 4 through 7. Items in these tables are keyed to a line drawing of

the test facility (Figure 3), which is based on the [REDACTED] photography. A perspective drawing of a test stand or stands accompanies each table.

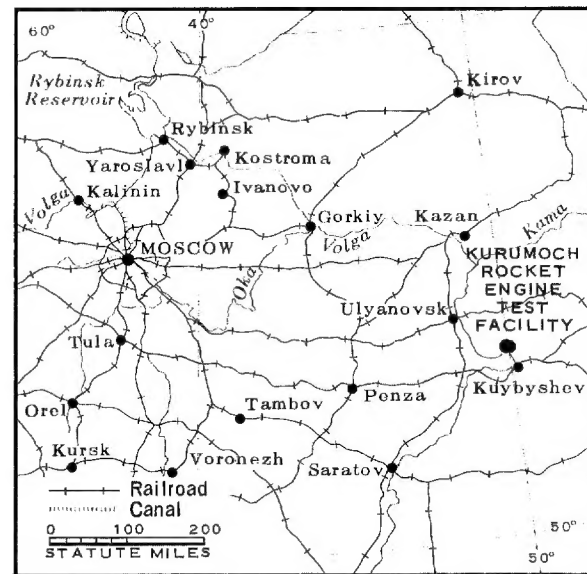


FIGURE 1. LOCATION OF KURUMOCH ROCKET ENGINE TEST FACILITY, USSR.

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FIGURE 2. KURUMOCH ROCKET ENGINE TEST FACILITY, [REDACTED]

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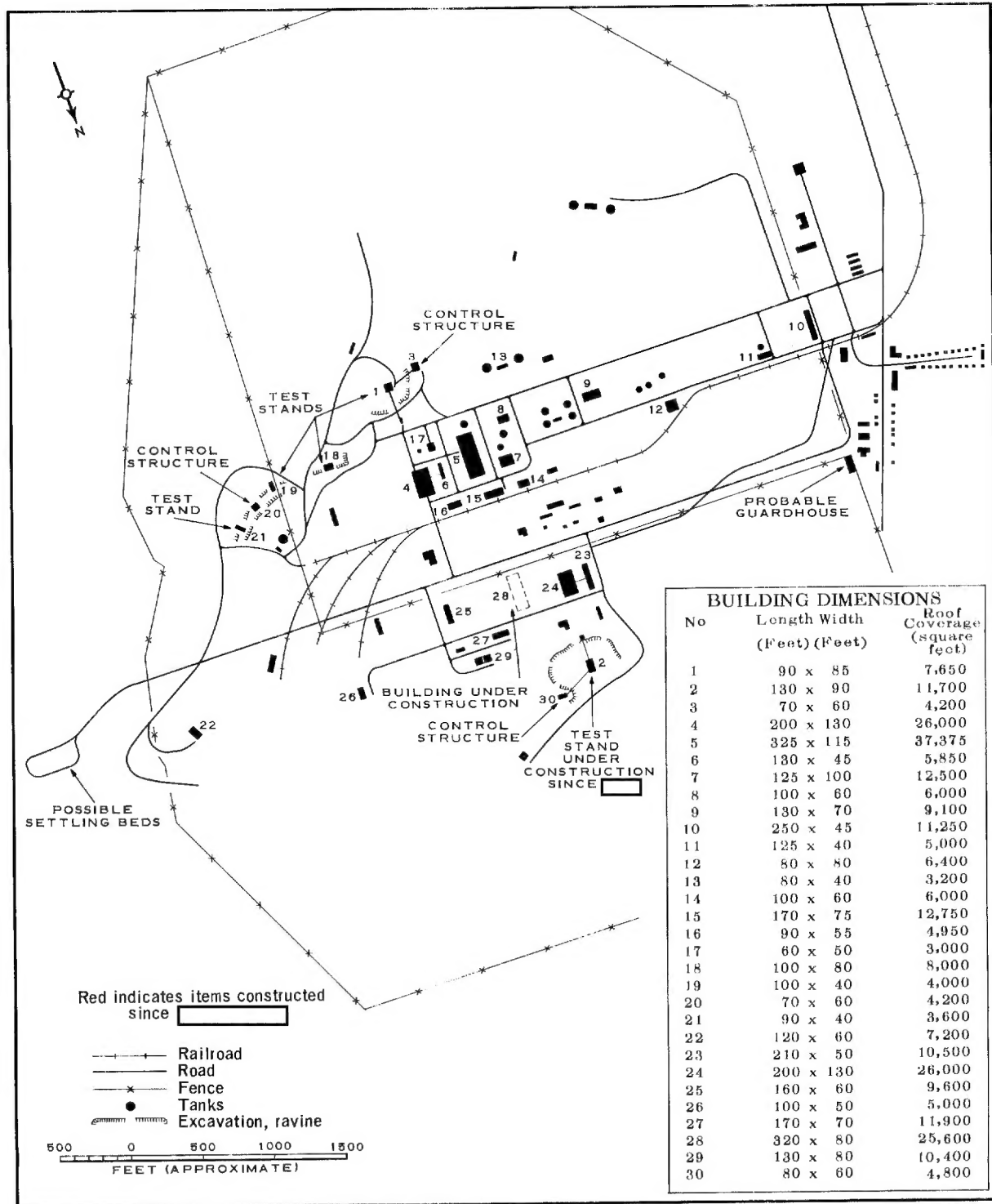


FIGURE 3. KURUMOCH ROCKET ENGINE TEST FACILITY.

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<i>Data Regarding Completed Vertical Test Stand</i>	
General	Vertical test stand (item 1) built in excavation in side of bluff Overall height, 185 ft
Superstructure	90 by 85 ft, height 125 ft (70 ft above access bridge, 55 ft below bridge); 25-ft overhang over base structure, probably toward blast area Tower enclosed; two structural members intersect at roof center
Base Structure	85 by 65 ft, height 60 ft Divided into three longitudinal bays by interior walls or columns
Access	Bridge, 25 ft wide, directly into stand; other end to abutment structure where it joins road to checkout building; bridge in line with checkout building Bridge containing passageway/pipe gallery from control structure Road to blast area at base of stand
Status and Timetable	Operational prior to [redacted] (blast mark in snow) Under construction in [redacted] exterior completed by [redacted]
Blast Mark	Visible on photography of [redacted] Length: estimated 240 ft, overall, from base of stand Width: 150 ft at maximum, 70 ft at base of stand Axis of blast mark centered on stand; blast mark symmetrical
Drainage	Into ravine; possible settling beds downstream
Control Structure	Building (item 3); 70 by 60 ft; on edge of excavation Site prepared by [redacted] Bridge containing passageway/pipe gallery from control structure to stand
Operational Support	Checkout building (item 4); 200 by 130 ft, height 30 ft; two bays; drive-through bay in line with access bridge road; under construction in [redacted] Building (item 6); 130 by 45 ft, height 30 ft; connected to checkout building by passageway/pipe gallery; under construction in [redacted] Building (item 5); 325 by 115 ft, height 60 ft Building (item 15); 170 by 75 ft, height 30 ft; contains horizontal cylinder; under construction in [redacted]
Dispersal	575 ft to checkout building 160 ft to control structure

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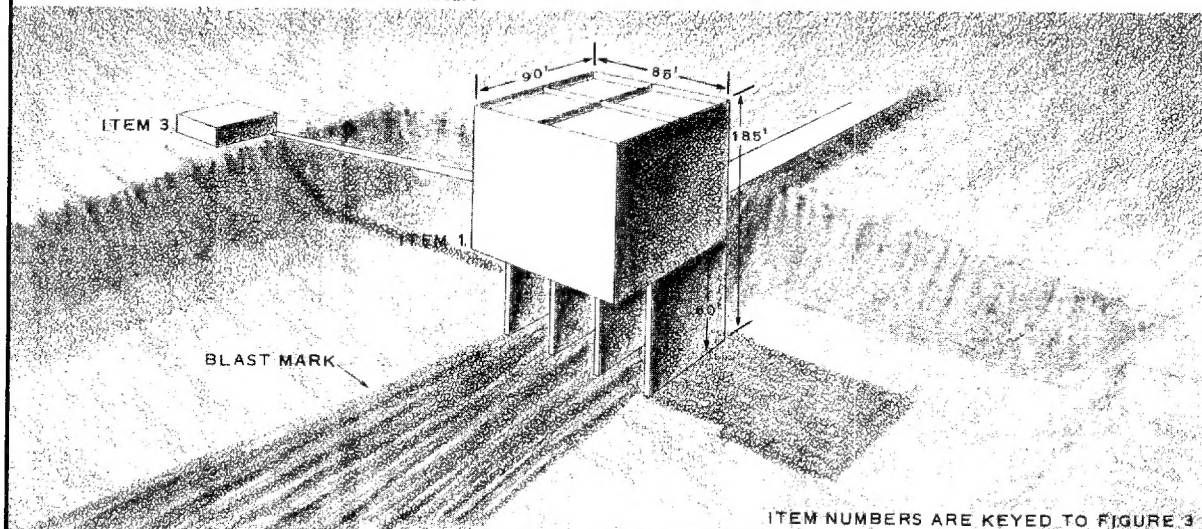


FIGURE 4. COMPLETED VERTICAL TEST STAND (Item 1, Figure 3).

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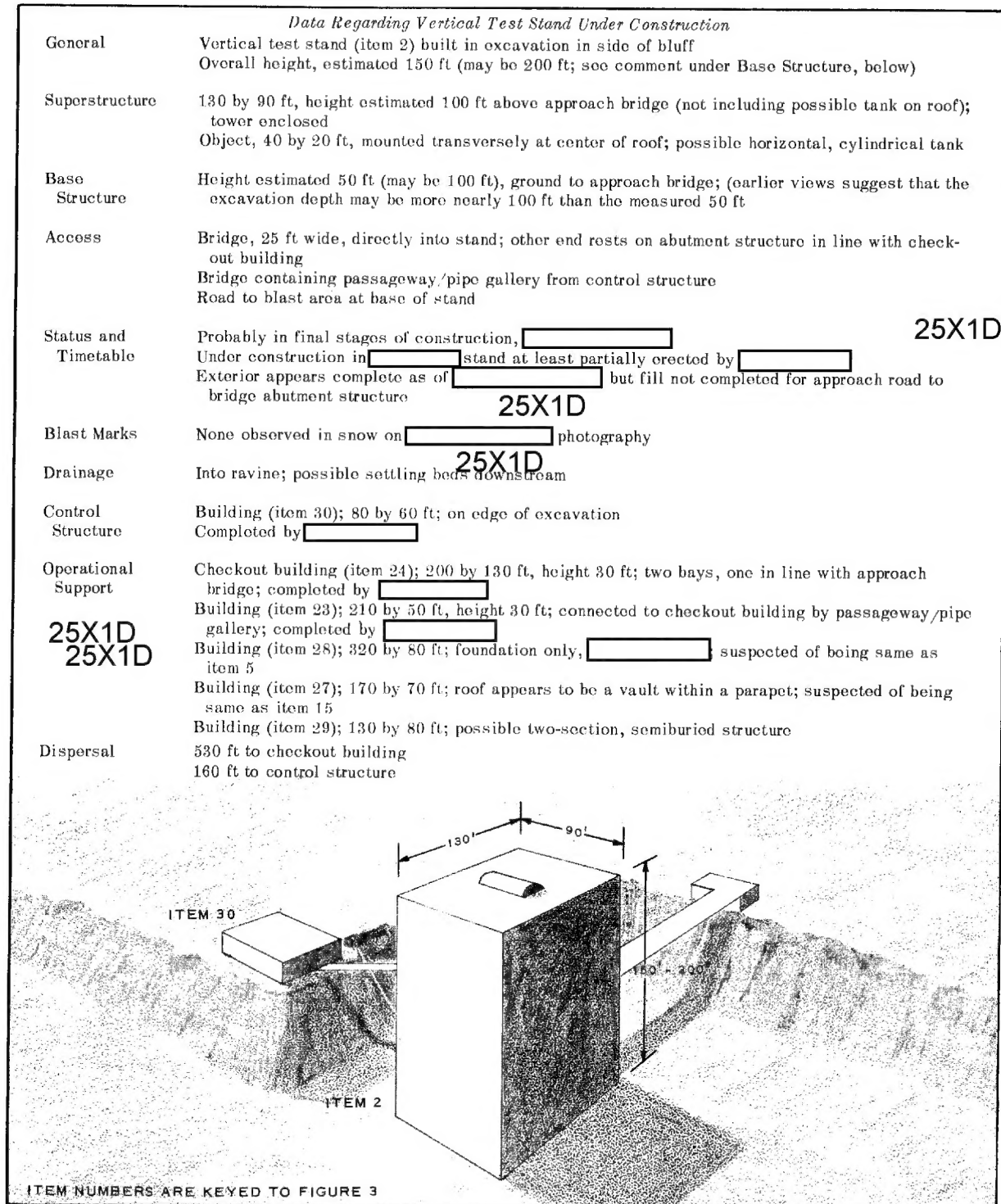


FIGURE 5. VERTICAL TEST STAND UNDER CONSTRUCTION (Item 2, Figure 3).

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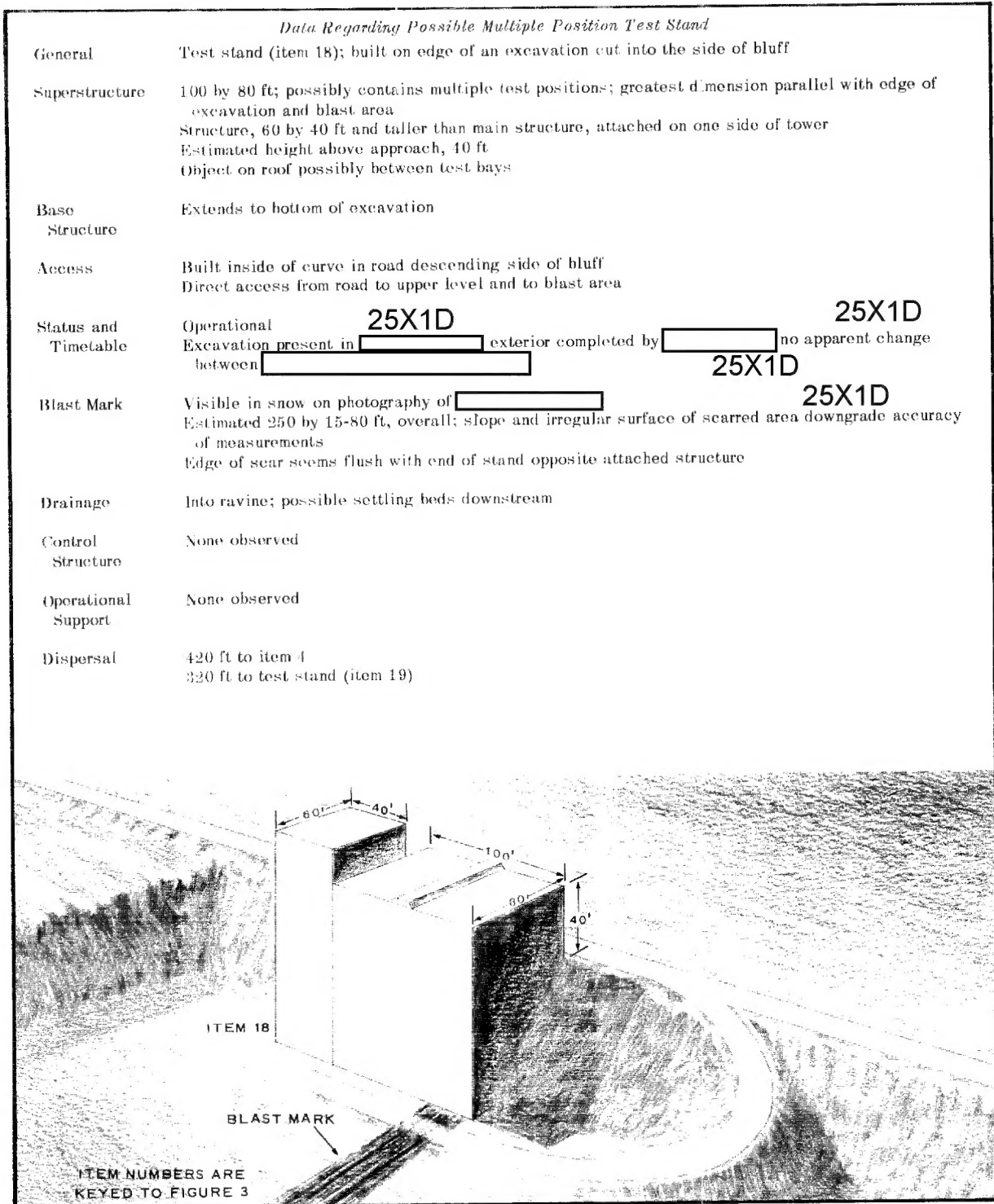


FIGURE 6. POSSIBLE MULTIPLE POSITION TEST STAND (Item 18, Figure 3).

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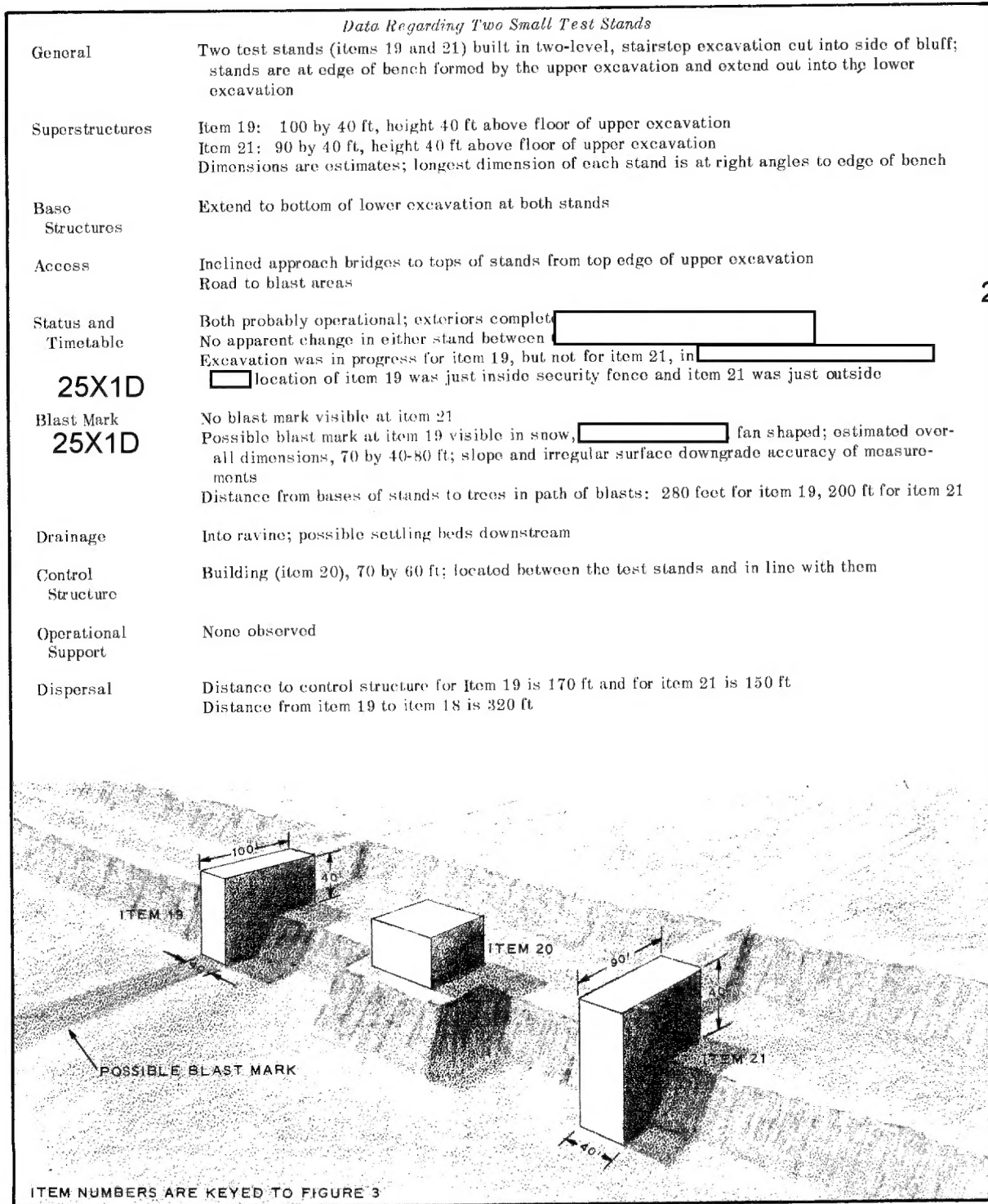


FIGURE 7. TWO SMALL TEST STANDS AND CONTROL STRUCTURE (Items 19, 20, and 21, Figure 3).

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# CONCLUSIONS

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Certain conclusions not previously attainable have been reached concerning details of the Kurumoch Rocket Engine Test Facility as a result of the [redacted] photographic coverage. These conclusions are possible because of several factors. First, the new photography permits comparisons between the facility as it is now and as it has appeared at different times in the past. Second, the quality of the latest photography has made possible the taking of certain measurements and the discernment of certain shapes that could not be accomplished on earlier photography. Finally, the presence of

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Prior to the latest photographic coverage, the principal matters about which there had been some doubt were: (1) the number of test positions at the test stand first identified in [redacted] (item 1, Figure 3); (2) the size of the test stand under construction (item 2); (3) the number of smaller test stands, and (4) the function(s) of the two buildings in the operational support facility adjoining the completed vertical test stand (item 1). 2/ 3/

The latest photography has permitted measurement of the vertical test stand under construction as well as of other structures, and this data has been presented on Figures 4 through 7. Other findings and conclusions are presented in the following numbered paragraphs, including statements regarding the status of the test stands, data concerning the number of test positions in each stand, and data concerning the operational support facilities.

1. The installation contains five test stands: a vertical test stand (item 1, Figure 3), a vertical test stand under construction (item 2), and three smaller test stands (items 18, 19, and 21). Adjoining each of the two vertical test stands is a support facility containing a check-out building and other structures.

2. The vertical test stand (item 1) is currently operational and contains one test position. The stand has a single symmetrical blast mark, the axis of which is centered on the stand with its width next to the stand being the same as the width of the stand. (For additional data, see Figure 4.)

3. The vertical test stand under construction (item 2) is in the final stages of construction. It is larger than the other vertical test stand and probably contains one test position. The construction status is indicated by the completion of the structure and lack of an access road; that it probably has one position is indicated by the shape of the stand. (For additional data, see Figure 5.)

4. One of the smaller stands (item 18) is currently operational and probably contains multiple test positions as indicated by its shape and the size and position of the blast mark. (For additional data, see Figure 6.)

5. The other two smaller stands (items 19 and 21) are similar in appearance, are different from the other stands, and are probably operational. The access bridge at each stand leads to the top of the stand. Each stand contains one test position; this is indicated by the presence of one centered possible blast mark at item 19, by the lack of apparent change between [redacted] and by the shapes of the stands. (For additional data, see Figure 7.)

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6. The operational support facilities adjoining the two large test stands are duplicates of each other in part and appear to be duplicates in many other respects. Items 4 and 24, 6 and 23 are matching pairs, and items 5 and 28, 15 and 27 are possible matching pairs. The apparent duplication may indicate either that the support facilities do not contain industrial processes which serve the entire test facility or that the items to be tested at the two large test stands are different.



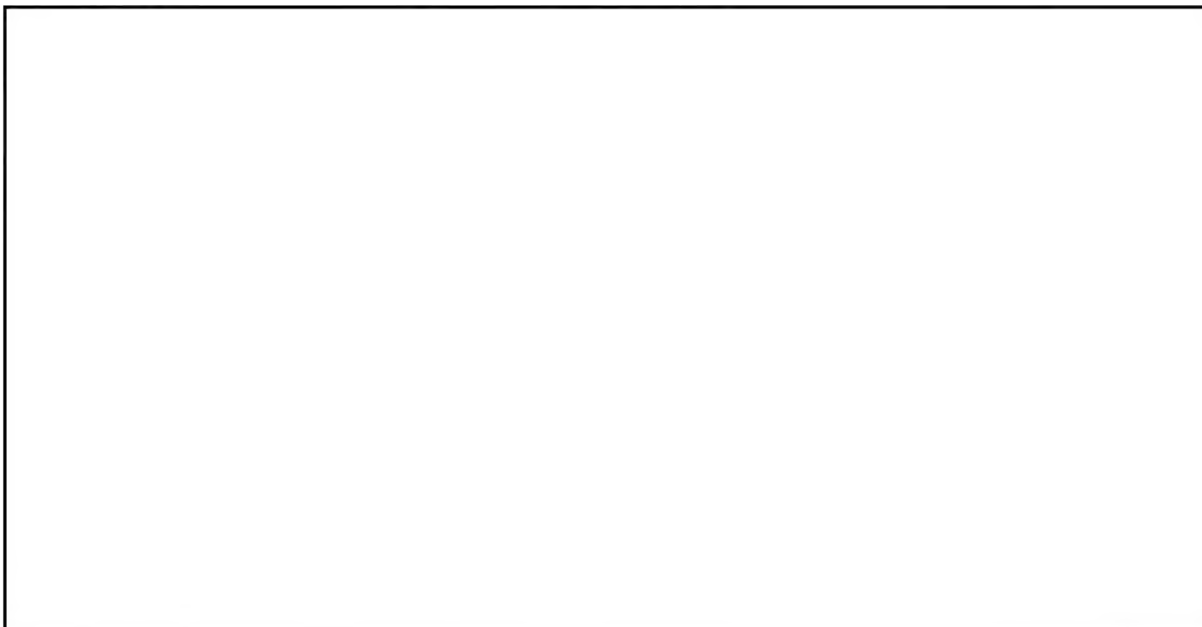
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NPIC/R-157/64

REFERENCES

PHOTOGRAPHY

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MAPS OR CHARTS

ACIC. US Air Target Chart, Series 200, Sheet 0165-17A, 3d ed, Jan 60, scale 1:200,000 (SECRET)

DOCUMENTS

1. NPIC. R-309/63, Kurumoch Rocket Engine Test Facility, USSR, Dec 63 (TOP SECRET [redacted])
2. USAF. ATIS-T-60-5, Kurumoch Rocket Engine Facility, 15 Sep 60 (TOP SECRET [redacted])
3. CIA. OSI. PEM-0387/12/63, [redacted] Dec 63 (TOP SECRET [redacted])

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RELATED DOCUMENTS

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NPIC. B-47/61, Propulsion Test Complex, Kurumoch, USSR: Changes Since [redacted] Dec 61 (TOP SECRET [redacted])

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NPIC. R-99/63, Kurumoch Rocket Engine Test Facility: Original Test Stand, Kurumoch, USSR, Jun 63 (TOP SECRET [redacted])

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REQUIREMENT

CIA. PC-56-64

NPIC PROJECT

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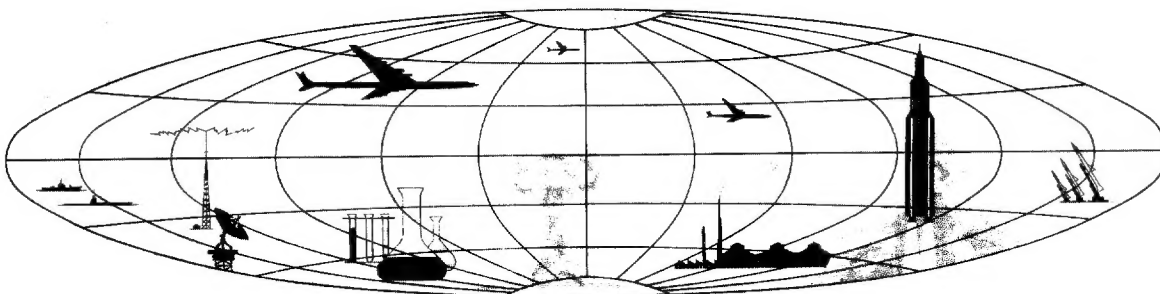
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